UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,189	10/29/2001	Damon John Ennis	10.0423 (4366)	4108

22474	7590	07/07/2006

DOUGHERTY CLEMENTS
1901 ROXBOROUGH ROAD
SUITE 300
CHARLOTTE, NC 28211

EXAMINER
WON, MICHAEL YOUNG

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/003,189	ENNIS ET AL.
	Examiner	Art Unit
	Michael Y. Won	2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 April 2006*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-33* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the amendment filed March 30, 2006 and the

Request for Continued Examination filed March 28, 2006.

2.   Claims 1, 12, and 23 have been amended.

3.   Claims 1-33 have been examined and are pending with this action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Britton et al. (US 6,401,136 B1) in view of Piskiel et al. (US 5,916,307 A) and still further

in view of Brasher et al. (US 6,895,586 B1).

INDEPENDENT:

As per **claim 1**, Britton teaches a method, implemented by a communication

coordinator on a module, for carrying out reliable communication in a communication

system, comprising:

receiving a message from a sender (see col.2, line 66-col.3, line 4: "transmitting a message stored in a source persistent queue at the source device over the external communication link to the destination device") intended for one or more applications (see col.3, lines 32-34: "allows data to be more quickly available to applications"), said message comprising a message identifier (see col.3, lines 4-10: "sequence identifier");

determining based upon said message identifier whether said message had previously been received (see col.10, lines 33-36: "then the message was previously received"); and

in response to a determination that said message had previously been received, foregoing delivery of said message to said one or more applications (see col.10, lines 33-36: "discarded").

Britton does not explicitly teach wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once.

Piskiel teaches wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once (see col.5, lines 27-31 and col.18, lines 48-51).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teaching of *Piskiel* within the system of *Britton* by implementing a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once within the reliable communication method because *Piskiel* teaches that such implementation improves performance (see

abstract, last sentence) and *Britton* attempts to improve performance (see col.3, lines

32-34 & lines 52-57; and col.4, lines 23-25).

Britton does not explicitly teach wherein a subscriber is enabled to subscribe to

multiple events using a single namespace specification and a single subscription

service request.

Brasher teaches wherein a subscriber is enabled to subscribe to multiple events

using a single namespace specification and a single subscription service request (see

col.17, lines 42-46).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to employ the teaching of *Brasher* within the system of *Britton* by

implementing wherein a subscriber is enabled to subscribe to multiple events using a

single namespace specification and a single subscription service request within the

reliable communication method because such implementation improves performance by

drastically reducing the number of communications as compared to when subscribing to

each event and *Britton* attempts to improve performance (see col.3, lines 32-34 & lines

52-57; and col.4, lines 23-25).

As per *claim 12*, *Britton* teaches an apparatus for implementing reliable

communication in a communication system, comprising:

a mechanism for receiving a message from a sender (see col.2, line 66-col.3, line

4: "transmitting a message stored in a source persistent queue at the source device

over the external communication link to the destination device") intended for one or

more applications (see col.3, lines 32-34: "allows data to be more quickly available to applications"), said message comprising a message identifier (see col.3, lines 4-10: "sequence identifier");

a mechanism for determining based upon said message identifier whether said message had previously been received (see col.10, lines 33-36: "then the message was previously received"); and

a mechanism for foregoing, in response to a determination that said message had previously been received, delivery of said message to said one or more applications (see col.10, lines 33-36: "discarded").

Britton does not explicitly teach wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once.

Piskiel teaches wherein a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once (see col.5, lines 27-31 and col.18, lines 48-51).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teaching of *Piskiel* within the system of *Britton* by implementing a message exchange between a sender and a receiver is conducted ensuring that a message is delivered at most once within the reliable communication apparatus because *Piskiel* teaches that such implementation improves performance (see abstract, last sentence) and *Britton* attempts to improve performance (see col.3, lines 32-34 & lines 52-57; and col.4, lines 23-25).

Brasher teaches wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request (see col.17, lines 42-46).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teaching of *Brasher* within the system of *Britton* by implementing wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request within the reliable communication method because such implementation improves performance by drastically reducing the number of communications as compared to when subscribing to each event and *Britton* attempts to improve performance (see col.3, lines 32-34 & lines 52-57; and col.4, lines 23-25).

As per *claim 23*, *Britton* teaches a computer readable medium comprising instructions which, when executed by one or more processors, cause the one or more processors to implement reliable communication in a communication system, said computer readable medium comprising:

instructions for causing one or more processors to receive a message from a sender (see col.2, line 66-col.3, line 4: "transmitting a message stored in a source persistent queue at the source device over the external communication link to the destination device") intended for one or more applications (see col.3, lines 32-34: "allows data to be more quickly available to applications"), said message comprising a message identifier (see col.3, lines 4-10: "sequence identifier");

instructions for causing one or more processors to determine based upon said

message identifier whether said message had previously been received (see col.10,

lines 33-36: "then the message was previously received"); and

instructions for causing one or more processors to forego, in response to a

determination that said message had previously been received, delivery of said

message to said one or more applications (see col.10, lines 33-36: "discarded").

Britton does not explicitly teach wherein a message exchange between a sender

and a receiver is conducted ensuring that a message is delivered at most once.

Piskiel teaches wherein a message exchange between a sender and a receiver

is conducted ensuring that a message is delivered at most once (see col.5, lines 27-31

and col.18, lines 48-51).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to employ the teaching of *Piskiel* within the system of *Britton* by

implementing a message exchange between a sender and a receiver is conducted

ensuring that a message is delivered at most once within the reliable communication

program because *Piskiel* teaches that such implementation improves performance (see

abstract, last sentence) and *Britton* attempts to improve performance (see col.3, lines

32-34 & lines 52-57; and col.4, lines 23-25).

Brasher teaches wherein a subscriber is enabled to subscribe to multiple events

using a single namespace specification and a single subscription service request (see

col.17, lines 42-46).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teaching of *Brasher* within the system of *Britton* by implementing wherein a subscriber is enabled to subscribe to multiple events using a single namespace specification and a single subscription service request within the reliable communication method because such implementation improves performance by drastically reducing the number of communications as compared to when subscribing to each event and *Britton* attempts to improve performance (see col.3, lines 32-34 & lines 52-57; and col.4, lines 23-25).

DEPENDENT:

As per **claims 2, 13, and 24**, which depends on claims 1, 12, and 23, respectively, *Britton* further teaches wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had previously been received comprises:

determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators (implicit: see col.10, lines 33-41: any **missing** sequence number is a sequence number higher than the most recent committed sequence number); and

in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received (implicit: see col.10, lines 33-41: if the "sequence number" is "less than or equal to" the "committed sequence number", then

the message has been previously received since the "committed sequence number" is the largest received sequence number that is incremented and any **missing** sequence number is a sequence number higher than the most recent committed sequence number).

As per *claims 3, 14, and 25*, which depends on claims 2, 13, and 24, respectively, *Britton* further teaches wherein determining whether said message had previously been received further comprises:

in response to a determination that said message sequence indicator is one of the sequence indicators in said set of missing sequence indicators, concluding that said message had not previously been received (see claim 2, 13, and 24 rejection above: any **missing** sequence number is a sequence number higher than the most recent committed sequence number); and

removing said message sequence indicator from said set of missing sequence indicators (see col.10, lines 45-48).

As per *claims 4, 15, and 26*, which depends on claims 3, 14, and 25, respectively, *Britton* teaches of further comprising: in response to a determination that said message had not previously been received, delivering said message to said one or more applications (see Fig.2, step 120).

As per *claims 5, 16, and 27*, which depends on claims 1, 12, and 23, respectively, *Britton* further teaches wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had previously been received comprises: accessing a receiving sequence indicator

associated with said sender (see Fig.2, step 112); determining whether said message sequence indicator precedes said receiving sequence indicator in a predetermined sequence; in response to a determination that said message sequence indicator precedes said receiving sequence indicator in said predetermined sequence, determining whether said message sequence indicator is one of the sequence indicators in a set of missing sequence indicators; and in response to a determination that said message sequence indicator is not one of the sequence indicators in said set of missing sequence indicators, concluding that said message had previously been received (see claim 2, 13, and 24, and claim 3, 14, and 25 rejections above).

As per *claims 6, 17, and 28*, which depends on claims 1, 12, and 23, respectively, *Britton* further teaches wherein said message identifier comprises a message sequence indicator, and wherein determining whether said message had previously been received comprises: accessing a receiving sequence indicator associated with said sender; determining whether said message sequence indicator is equivalent to said receiving sequence indicator; and in response to a determination that said message sequence indicator is equivalent to said receiving sequence indicator, concluding that said message had previously been received (see claim 2, 13, and 24, and claim 3, 14, and 25 rejections above).

As per *claims 7, 18, and 29*, which depends on claims 1, 12, and 23, respectively, *Britton* teaches of further comprising: in response to a determination that said message had not previously been received, delivering said message to said one or more applications (see Fig.2, step 120).

As per *claims 8, 19, and 30*, which depends on claims 7, 18, and 29,

respectively, *Britton* further teaches wherein said message identifier comprises a

message sequence indicator, and wherein determining whether said message had

previously been received comprises: accessing a receiving sequence indicator

associated with said sender; determining whether said message sequence indicator

precedes said receiving sequence indicator in a predetermined sequence; in response

to a determination that said message sequence indicator precedes said receiving

sequence indicator in said predetermined sequence, determining whether said message

sequence indicator is one of the sequence indicators in a set of missing sequence

indicators; in response to a determination that said message sequence indicator is one

of the sequence indicators in said set of missing sequence indicators, concluding that

said message had not previously been received; and removing said message sequence

indicator from said set of missing sequence indicators (see claim 2, 13, and 24, and

claim 3, 14, and 25 rejections above).

As per *claims 9, 20, and 31*, which depends on claims 7, 18, and 29,

respectively, *Britton* further teaches wherein said message identifier comprises a

message sequence indicator, and wherein determining whether said message had

previously been received comprises: accessing a receiving sequence indicator

associated with said sender; determining whether said message sequence indicator

comes after said receiving sequence indicator in a predetermined sequence; and in

response to a determination that said message sequence indicator comes after said

receiving sequence indicator in said predetermined sequence, concluding that said message had not previously been received (see claim 2, 13, and 24 rejection above).

As per **claims 10, 21, and 32**, which depends on claims 9, 20, and 31, respectively, *Britton* further teaches wherein determining whether said message had previously been received further comprises: in response to a determination that said message sequence indicator comes after said receiving sequence indicator in said predetermined sequence, determining whether there are any intervening sequence indicators between said message sequence indicator and said receiving sequence indicator; and in response to a determination that there is one or more intervening sequence indicators between said message sequence indicator and said receiving sequence indicator, adding said one or more intervening sequence indicators to a set of missing sequence indicators (see claim 2, 13, and 24, and claim 3, 14, and 25 rejections above).

As per **claims 11, 22, and 33**, which depends on claims 9, 20, and 31, respectively, *Britton* further teaches wherein determining whether said message had previously been received further comprises: in response to a determination that said message sequence indicator comes after said receiving sequence indicator in said predetermined sequence, updating said receiving sequence indicator with said message sequence indicator (see Fig.2, step 116 and col.10, lines 45-50).

Response to Arguments

5.   Applicant's arguments with respect to claims 1, 12, and 23 have been considered

but are moot in view of the new ground(s) of rejection. A new reference has been

discovered to explicitly teach the new amended limitations of claim 1, 12, and 23.

In the primary reference, *Britton*'s objective is to improve performance pertaining to

communication (see col.2, lines 50-53: "improvements in communications"). The

secondary references *Piskiel* and *Brasher* teaches of various means in improving

communication performance and therefore, it would have been obvious to one of

ordinary skill in the art to combine the teachings.
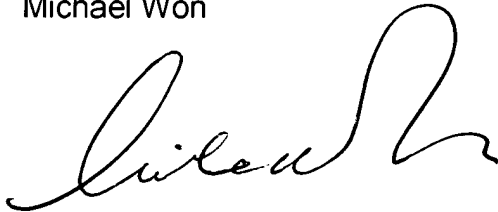
Conclusion

6.   For the reasons above, claims 1-33 remain rejected and pending.

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael Y. Won whose telephone number is 571-272-

3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Won

June 30, 2006